

Mobile Coverage Programme Discussion Paper Submission Cover Sheet

Submission Information

This cover sheet should be attached to submissions made to the Department of Communications in relation to the Mobile Coverage Programme Discussion Paper.

Contact Details

Name of respondent: Victorian Government

Name of organisation: Victorian Government

Phone: [REDACTED]

Email: [REDACTED]

Website (if applicable): www.vic.gov.au

Date: 28 February 2014

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Do you want all or parts of the submission to be treated as confidential? Yes No

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[REDACTED]

If the submission contains personal information of any third party individual, indicate on this Submission Cover Sheet if that third party individual has not consented to the publication of his or her personal information:

Submission Instructions

Submissions are to be made by **5:00pm (AEST) Friday 28 February 2014**.

Where possible, submissions should be lodged electronically, preferably in Microsoft Word or other text-based formats via the email address mobilecoverage@communications.gov.au

Alternatively, submissions can be sent to the postal address below (to arrive by the due date):

The Manager
Mobile Coverage Programme
Department of Communications
GPO Box 2154
CANBERRA ACT 2615

All submissions lodged will be acknowledged by the Department of Communications by email (or by letter if no email is provided). Respondents lodging a submission who do not receive acknowledgement of their submission should contact the Department. Submissions which are not acknowledged by the Department as being received may not be considered. Respondents should be aware that emails greater than 10Mb may not be successfully delivered.

**Victorian Government Response to the Commonwealth Government's
Mobile Coverage Programme Discussion Paper**

Executive Summary

- The Victorian Government has long advocated for improved regional mobile communications and welcomes the Commonwealth Government's \$100 million funding commitment to the Mobile Coverage Programme (MCP) to improve both mobile coverage and mobile service competition in regional Australia.
- The critical drivers for improved mobile coverage ought to be better public safety and economic development through digital communications, meaning a focus on disaster-prone area coverage, busy transport corridors and populated blackspots.
- The Victorian Government believes that the focus of the MCP should not be on area covered, but instead on the numbers of people who can receive a service. This is called "effective coverage" and includes the population in blackspots, and people in transit. Crucially it includes provision of services to the maximum number of mobile customers regardless of carrier, taking into account that customers are divided between Telstra, Optus and Vodafone Hutchison Australia (VHA) networks.
- The Victorian Government does not support a single carrier solution that provides no service to a large portion of the population, particularly where public safety is a factor. For example, emergency alerts are half as effective if they can only reach the customers of one network.
- The Commonwealth should seek roaming as a condition of MCP funding. Effective coverage and competition objectives are most likely to be efficiently delivered through projects that provide for roaming between the three mobile network operators (MNOs). The focus should be on immediate benefits and not potential for infrastructure competition in the longer term that may never develop in extremely marginal markets. These markets are natural monopolies and require a different approach to competition settings than in urban markets that support infrastructure based competition.
- The Victorian Government strongly supports an approach to the MCP that utilises National Broadband Network (NBN) infrastructure for mobile communications development. The State has supported the Commonwealth's comprehensive review of the NBN including a cost benefit analysis of alternative broadband technologies (including wireless) and methods of deployment to meet NBN objectives. These reviews should include a thorough examination of the viability of deploying mobile technology solutions as a substitute to NBN fixed wireless in regional locations where benefits outweigh costs.
- The Victorian Government is keen to ensure that the MCP design allows for early and ongoing Commonwealth and State engagement. Principles that underpin an effective State involvement are:
 - consistency between Commonwealth and State objectives and priorities

- clarity in the funding allocation process where additional benefits from any State contribution to the MCP can be identified and understood
 - adequate recognition of State in-kind infrastructure contributions (noting the Victorian Government's intention to facilitate and make available infrastructure at low cost)
 - governance arrangements and program methodology that allow State involvement in decisions around locations selected
 - an efficient program design that gives preference for the lowest cost : effective coverage solution and one that facilitates immediate services competition (roaming and utilisation of existing infrastructure including NBN).
- The Commonwealth should implement a single \$100 million program rather than the proposed \$80 million Mobile Network Expansion Project and \$20 million Mobile Black Spots Project. Administrative efficiencies and low bidder transaction costs are more likely to be realised from a single and coordinated approach to programs and not from two complex and overly dependent programs.

The remainder of this submission is divided into two parts:

- **Part A** provides the Victorian Government's overarching views on regional communications and issues this raises for mobile communications, remediation and program design.
- **Part B** provides specific responses to the Discussion Paper questions.

PART A

Mobile communications are increasingly important

1. Mobile telephony has become integral to business and consumer communications and has effectively converged with fixed networks. Mobility and mobile data are highly valued by consumers and a significant proportion of consumers have substituted their fixed line with mobile services.
2. While uptake and nominal population coverage of mobile communications networks are high there remain geographic and effective coverage issues that affect significant resident, transitory and travelling populations, as well as the delivery of emergency services.¹
3. Ongoing developments in the mobile communications market will accentuate the adverse impacts of poor coverage in regional areas, including:
 - metropolitan deployment of 4G with vastly improved data capabilities (comparable or better to fixed wireless NBN services)
 - the proliferation of different pre-paid and post-paid customer plans driven by intense competition between the three MNOs, development of a deep virtual network operators market, giving consumers wide retail choice (complemented by strong consumer protection regulation)
 - proliferation and strong consumer demand for smart devices (such as tablets that are increasingly network enabled)
 - development of a machine to machine (M2M) market with significant implications for regional industries and remote applications
 - rapid acceptance and growth of mobile based payments
 - complimentary development of WiFi networks (through business models involving cross subsidy and therefore low direct consumer prices).

Policy commitment to improve mobile communications

4. The growing importance of mobile communications was not adequately recognised in regional communications policy of the previous Commonwealth Government.
5. The Victorian Government has strongly argued the case for improved regional mobile communications and welcomes the Commonwealth Government's \$100 million funding commitment to improve mobile both coverage and competition in regional Australia. The Government also welcomes the Commonwealth intention to utilise NBN infrastructure to support mobile communications development as a sensible policy response to cost effective infrastructure development in commercially thin regional markets.²

¹ Reference ACMA, *Reconnecting the Customer. Mobile network performance forum discussion paper* (2013). Mobile coverage issues are the highest reason for complaints made to the Telecommunications Industry Ombudsman.

² Refer to the Victorian Government submission to the *2011-12 Regional Telecommunications Review* at <http://www.rtrc.gov.au/files/2012/01/Victorian-Government-Vic1.pdf>

6. There are economies of scale and other efficiencies that enable maximum benefits from the MCP that can only be realised through a joint/cooperative State/Commonwealth program. Administrative efficiencies and low bidder transaction costs will most likely result from a single and coordinated approach to programs rather than multiple, complex and highly dependent programs.

Regional communications policy context

7. The fundamental issue for regional markets is the cost of remote/distant infrastructure deployment including site access, spectrum, tower construction, permanent power, and provision of backhaul, relative to thin and low growth revenues—in short, natural monopoly conditions. In these circumstances innovative program design and business models are required including more cooperative approaches to leveraging multiple benefits overtime as well as multiple funding sources, including in-kind contributions such as access to sites and existing infrastructure.
8. Innovative program design and collaboration will be required to meet multiple and potentially competing policy objectives (such as competition and coverage).
9. It is important that public subsidies capture long term strategic, public benefits rather than just providing narrow commercial benefits. In particular improved mobile coverage in regional and remote locations can improve public safety and reduce community vulnerability during natural disasters and day to day emergency events.³
10. Australia's regional communications policy has not kept pace with the rapid development of mobile communications. Four initial observations are:
 - The development of the NBN in isolation to and in competition with mobile communications has risked ignoring consumer preferences and unnecessarily duplicating government investments in thin regional markets. As noted above it is a welcome development that the Commonwealth is looking to better utilise NBN infrastructure to support mobile communications network development, in particular by providing access to:
 - NBN co transit backhaul or other fibre optic cable (FOC) links
 - NBN Co towers and other facilities (noting a strong correlation between NBN Co tower facilities and mobile black spots areas in Victoria)
 - A policy approach of subsidising fixed infrastructure (eg. NBN investments and Universal Service Obligation subsidies) separate to mobile infrastructure (eg. MCP) in regional markets is unlikely to efficiently or comprehensively deal with regional communities' communications needs. This approach poses the risk that small country towns will have highly subsidised and directly competing fixed and mobile wireless networks, without properly testing the most cost efficient infrastructure to meet needs.
 - The Commonwealth has expressed a preference for wholesale, open access network arrangements in NBN fixed wireless infrastructure development. This sits

³ Note for example there has been a very rapid increase in the number of 000 calls from mobile handsets.

uneasily with the traditional infrastructure competition based approach for mobile communications in marginal regional markets.

- There are pressing policy issues relating to mobile telephony and public safety. The long term arrangements for the management and delivery of the National Emergency Warning System (emergency alerts) needs to be put on a sustainable footing. The Commonwealth should develop policy for MNOs to provide location based information for emergency call takers to improve public safety.
11. The lack of access to low cost backhaul and its long standing ineffective regulation has been a key barrier to investment in regional communications, including development of improved mobile telephony. This is currently subject to ACCC review as it is apparent that backhaul access terms and conditions remain problematic in regional markets.
 12. The Commonwealth's previous investment in the Regional Backbone Blackspots Program (RBBP) provides one model for addressing this issue. A similar program could be considered by the current NBN reviews. The Victorian Government's investment in backhaul to Warrnambool demonstrates another model for developing digital communications infrastructure (including mobile) in regional markets.
 13. The Victorian Government has welcomed the Commonwealth's announcement to comprehensively review the NBN including a cost benefit analysis of alternative broadband technologies (including wireless) and methods of deployment to meet NBN objectives. These reviews should include a thorough examination of the viability of nominal mobile technology solutions as a substitute as well as a compliment to fixed wireless in regional locations, based on costs and benefits.
 14. An immediate issue is how the Commonwealth is able to capture and plan for these benefits from better integrating regional communications policy within the timeframes of the MCP and the review of the NBN policy and business plan.

Objectives of improving mobile communications network coverage

15. The Victorian Government has strongly supported the *2011-12 Regional Telecommunications Review* findings in regard to the importance of mobile communications for both economic development and public safety. The adequacy of mobile communications was the predominant concern raised with the Committee who concluded that:

*Mobile communication is considered essential for people to run businesses, work in remote areas, to encourage tourism and growth and to have reliable communications in emergency situations.*⁴

⁴ *2011-12 Regional Telecommunications Review*, Finding 3.3 (p.47).

Public safety

16. Improved mobile communications network coverage will improve public safety responses and outcomes by:⁵
- broadening the reach of emergency alerts to the public⁶ and thereby enabling an early response to disasters
 - enabling communications outside the home and along transport routes that are important to reduce community anxiety and vulnerability during emergency events
 - improving emergency services communications and management. In a longer time frame public safety mobile broadband (PSMB) will utilise the improved network coverage from MCP to deliver significant public safety and emergency/disaster management benefits.⁷ Improved mobile coverage also supplements communications to emergency management agencies. It is important that the MCP design has these long term public interests in mind.
17. Improved mobile communications is required to better inform decision making in the event of an emergency and to support the Victorian Government's principle of adopting a shared responsibility and shared obligation with communities and businesses to manage emergency events and disasters such as bushfires.
18. Mobile communications can also play an important role as an alternative and resilient communications when fixed infrastructure is not operating as recently experienced during the Telstra exchange fire in Warrnambool.⁸

Economic development

19. The economic impacts of improved mobile coverage, uptake and use are significant and have been demonstrated by a growing body of national and international evidence.⁹ Mobile network development also underpins M2M applications with particular benefits in regional locations.¹⁰
20. Improved mobile communications provide important benefits to businesses. Research conducted by the Victorian Government estimates that business benefits from improved mobile coverage may be in the order of \$50,000 per annum per business due to:

⁵ Assuming the consumer's service provider has network coverage.

⁶ <http://www.emergencyalert.gov.au/>

⁷ Commonwealth Parliament Joint Committee, *Spectrum for public safety mobile broadband* (July 2013), Chapter 3.

⁸ Refer to Victorian Government submission to the DBCDE *Inquiry to learn lessons from the Warrnambool exchange fire* at http://www.communications.gov.au/telephone_services/warrnambool_inquiry

⁹ See for example *What is the impact of mobile telephony on economic growth? A report for the GSM Association*, <http://www.gsma.com/publicpolicy/wp-content/uploads/2012/11/gsma-deloitte-impact-mobile-telephony-economic-growth.pdf>

¹⁰ For example rapid growth in M2M applications has the potential to partially offset a lack of consumer demand in less populous markets – see *From concept to delivery: the M2M market today* at <https://gsmaintelligence.com/files/analysis/?file=140217-m2m.pdf>

- labour productivity from time savings and reduced travel costs, improved coordination, administration and information available from mobile communications and extended coverage
 - capital productivity through increasing effectiveness or reduced need for equipment and labour (such as remote sensors, intelligent transport systems).
21. The Victorian Government has also analysed the benefits of improving mobile coverage along its key regional rail commuter routes. It has been found that there would be significant productivity benefits from continuous voice and broadband access given the large number of working commuters using these routes each day (**Attachment A** – provided in confidence).

Victoria's mobile black spots and priorities

22. The Victorian Government has analysed its mobile black spots against its distribution of population and economic activity, and modelled the safety and economic benefits of improved coverage.
23. The Victorian Government is analysing the risks attached to different mobile communications blackspots, taking into account up to date information on bushfire risk (refer **Attachment B** for a summary of the methodology – provided in confidence).
24. The Victorian Government has also consulted widely with regional communities and local governments on their specific issues and problems with mobile communications. The Government has received feedback from representatives of 27 rural and regional councils. Their comments reflect widespread concern at the impact of black spots on community safety, particularly bushfire risk, effectiveness of emergency alerts and coverage of transport links. The councils also raised issues of the economic and social impact of black spots on local communities, with the impact on tourism a consistent concern.

Effective coverage and real competition

25. The Discussion Paper notes the objectives of the MCP are “to improve coverage and competition in service provision”.
26. Coverage needs to effectively address the mobile subscriber population – that is, subscribers to all carrier networks (noting market shares of Telstra, Optus and Vodafone on a national basis are approximately 49%; 31%; and 20% respectively).¹¹
27. An important objective for the Victorian Government is to maximise effective coverage from the MCP to enable the maximum number of mobile phone holders are able to receive benefits including location based emergency alerts.¹²

¹¹ Noting Telstra's share of the regional market is likely to be higher.

¹² Noting that “Special roaming capabilities of the vast majority of mobile phones when calling 000 mean that when you are out of your service provider's coverage area but are in another carrier's mobile phone network coverage area, your call will be carried on the other carrier's network.”

<http://www.acma.gov.au/Citizen/Consumer-info/All-about-numbers/Special-numbers/calling-the-emergency-call-service-from-a-mobile-phone-faqs-i-acma>.

28. The Victorian Government supports competition as the most likely mechanism to provide the preconditions for long term market development and innovation.
29. Competition can be delivered at the service as well as the infrastructure level through infrastructure access arrangements or through roaming agreements between MNOs.
30. The Victorian Government's view is that in regional and remote markets where commercial incentives for duplicated investments are weak, reflecting the natural monopoly characteristics of regional telecoms. It is highly unlikely and a risky policy assumption that infrastructure competition will develop through the provision of infrastructure access and shared backhaul alone. An infrastructure access approach is a high cost option that may entrench the market power of the dominant regional MNO and not promote competition. It may also compromise effective coverage by overinvesting in infrastructure and by not providing for services to all MNOs.
31. The Victorian Government's preference is for the Commonwealth to strongly pursue roaming and include it as an assessment criterion for MCP funding, and to regulate for more competitive regional backhaul outcomes.

Mobile Roaming

32. Roaming arrangements are common place and have been previously implemented by all three mobile carriers. They are technically standardised and not considered difficult or costly to implement¹³ and can be provided for on a localised basis (to the base station level) or at the service level (eg. to provide for voice, text or data). Roaming in coverage areas expanded by the MCP can therefore be implemented in a manner consistent with the MNO's broader commercial interests.
33. Utilising roaming arrangements will most efficiently provide for MCP objectives. It will enable:
 - maximum effective coverage (all MNOs access at lowest cost)
 - minimised infrastructure deployment costs (eg. towers, power, backhaul¹⁴ and facilities provisioned for one MNO rather than three)
 - minimised program and regulatory complexity (avoiding complex commercial negotiations for each site)
 - services based competition consistent with the Commonwealth Government's approach in other telecommunications markets.

¹³ Advice to the Victorian Government is that establishment of a national roaming agreement (both technical and commercial aspects) between two of the existing Australian based operators would cost no more than a CAPEX of \$1 million and an OPEX of \$100,000 for roaming across 2G and 3G networks.

¹³ Advice to the Victorian Government is that the additional costs to deploy 3 MNO's with shared backhaul transmission at a site compared to one MNO with roaming arrangements is:

- Between \$100,000 to \$150,000 for additional site infrastructure, including shelters, power & tower structure; and
- Between \$100,000 and \$250,000 for Radio Access equipment installed by the MNO's depending on the radio access configuration (2G, 3G and 4G) supported by the MNO's at the site..

¹⁴ Advice to the Victorian Government is that the additional cost to provide separate microwave backhaul transmission for each MNO at a site as compared to sharing a common microwave backhaul link, could amount to \$200,000 to \$300,000.

34. Program outcomes will benefit from clear specification of the expected lowest cost mechanism for achieving MCP objectives.
35. The Victorian Government believes that commercial and strategic considerations will drive participation by all major MNOs in the MCP if roaming is highly valued as an assessment criterion if not mandated.

Request this paragraph be kept in confidence

36. [REDACTED]

Victorian Government infrastructure

37. The Victorian Government owns or controls access to a significant number of sites and infrastructure including towers, related facilities and FOC assets that should be leveraged to lower the cost of improving mobile coverage. An overview of Victorian Government infrastructure is available on request.
38. The Victorian Government's preferred approach is to freely share information on its sites infrastructure with MCP bidders on a non-exclusive basis in order to support proposals that meet Victorian objectives. The Victorian Government will then provide the Commonwealth's preferred respondents with facilitated access to its infrastructure where it is useful to MCP outcomes and Victorian objectives.
39. If access to Victorian Government sites and infrastructure are put forward by bidders to the MCP the Victorian Government expects that it will be appropriately valued as a State contribution, and that it is transparently treated by the Commonwealth Government in any arrangements made with the winning bidder.

Mobile Coverage Programme design

40. Coverage and competition objectives are most likely to be efficiently delivered through projects that provide for roaming between the three MNOs. The focus should be on known and immediate benefits and not the prospect of infrastructure competition.
41. The Victorian Government considers efforts to improve effective coverage should focus on public safety and promotion of economic development. This can be achieved by focusing on transport corridor and disaster-prone area coverage as well as populated blackspots. The critical drivers for improved mobile coverage should be more widespread access to early warning/alert systems and increased productivity.
42. Administrative efficiencies and lower bidder transaction costs are more likely to be realised from a single and coordinated approach to programs and not multiple, complex and dependent programs. The \$20 million Mobile Black Spots project allocated on a site by site basis will lose these economies and be costly and difficult to implement. It ought to be amalgamated into a single and coordinated \$100 million process.
43. The Victorian Government is keen to ensure that the Commonwealth programme design allows for early and ongoing Victorian Government engagement. Principles that underpin potential State involvement are:

- consistency between Commonwealth and State objectives/priorities reflected in MCP evaluation criteria
- certainty of process and funding to Victoria to support a State funding commitment recognising that all States have different conditions for telecommunications investment and different needs and priorities.
- adequate recognition of State in-kind infrastructure contributions (noting Victoria's intention to facilitate and make available infrastructure at low cost)
- governance arrangements for State involvement in selection of MCP locations
- State contributions be utilised in an efficiently designed MCP:
 - Preference for the lowest cost: effective coverage deployment that facilitates immediate competition (roaming and utilisation of existing infrastructure)
 - Proper integration with NBN and other Commonwealth regional communications programs (lowest cost investment).

Part B

Specific responses to the Discussion Paper questions

	Victorian Government Comments
<p>MCP Objectives</p> <p>“The objective of the MCP is to invest in telecommunications network infrastructure to improve both coverage of high quality terrestrial mobile voice and wireless broadband services in regional Australia, and competition in the provision of such services.” (p.3)</p> <ul style="list-style-type: none"> • \$80 million Mobile Network Expansion Project to improve mobile coverage along major transport routes, in small communities and in areas prone to experiencing natural disasters • \$20 million Mobile Black Spots Project to improve mobile coverage in locations with unique coverage problems, such as areas with high demand for service during seasonal holiday periods. 	<p>Competition and coverage require definition:</p> <ul style="list-style-type: none"> • Competition may be realised at the infrastructure and/or service provision level. It should not be assumed that benefits flow only from infrastructure based competition. • Coverage objective is effective coverage which may be defined as access of all mobile subscribers rather than MNO specific coverage. • The Victorian Government has generally defined coverage as ‘hand held on street’. <p>The range of benefits sought from improved effective coverage is public safety, economic and social amenity. The Victorian Government seeks to improve mobile coverage primarily for improved public safety and economic development.</p> <p>Transport routes should include rail commuter routes.</p> <p>There is a good case for a single \$100 million project (not the proposed \$80 million/\$20 million approach).</p> <ul style="list-style-type: none"> • Locations where mobile services become constrained due to capacity issues present a clear commercial driver for carrier rectification and are less likely to justify Government subsidy. Difficulties at these sites will be well known to carriers, and arguably the bulk of these will be in carrier’s three year rollout and investment plans and therefore ineligible for MCP funding. • Market responses will be stronger for a \$100 million program. A single program will be administratively simpler and less costly for bidders (including communities) and the Commonwealth, and allow for a quicker rollout. Local interests will be reflected in

	<p style="text-align: center;">identification of blackspots.</p>
<p>Delivery option 1 – Single mobile network operator contracted to deliver the programme</p>	<p>A ‘winner takes all’ approach will obviously favour Telstra who will be able to offer the greatest geographic coverage for least cost. This raises two issues:</p> <ul style="list-style-type: none"> • it will entrench Telstra dominance in regional markets with little likelihood of market entry and competition from other MNOs. • geographic coverage is not the right objective – as noted above, the coverage objective ought to be an effective mobile coverage defined as providing effective coverage to the total mobile subscriber population in the MCP areas. <p>These risks could be mitigated by requiring the selected MNO to provide roaming, and/or favourable access conditions (see below).</p>
<p>1. Would an appropriate minimum quality standard be that base stations must provide high-speed 4G LTE mobile broadband data communication services and also high quality 3G mobile voice and broadband data services? If this is not an appropriate minimum quality standard, what is?</p>	<p>The Victorian Government has indicated it regards both public safety and economic development as appropriate program objectives:</p> <ul style="list-style-type: none"> • for public safety 2G/3G voice and emergency alert messaging is a minimum requirement • for productivity and economic benefits and potentially for PSMB 4G is a minimum requirement • where coverage is provided there should be some commitment by the service provider and provision made for technology refresh from time to time to avoid obsolescence and future funding demands. <p>Where 4G is not proposed it will be important for the Commonwealth to understand the MNO’s upgrade plans and commercial models for such upgrade.</p> <p>It is suggested that the Commonwealth consider satellite options in areas where the cost of provision of terrestrial mobile telephony is too high. It is understood that satellite “sleeves” are now available for standard mobile phone handsets which may be worth investigating for viability as a program approach for some areas.</p>

<p>2. What are the most appropriate indicators that could be used to specify the minimum quality standards that should apply to the mobile services being provided through the programme? For instance, should it be a minimum received service signal indication (RSSI) in decibel-milliwatts (dBm)? A similar approach was adopted recently in the UK where a comparable programme specified a minimum RSSI for 3G voice and basic data service of -85dBm on roads and -75dBm in community areas (outside premises).</p>	<p>The Victorian Government notes that mobile telephony service standards are generally not regulated by the Commonwealth and that this is increasingly a matter of public concern. The Commonwealth Government and MNOs need to better inform consumers about coverage issues and in particular more fully respond to the <i>2011/12 Regional Telecommunications Review</i> Recommendation 3.1 to “develop a methodology, conduct audits and report on problem mobile phone coverage areas in response to complaints from the public”. (p.40)</p> <p>Specification of coverage quality in a definitive manner requires much more specificity than a simple case of specifying a RSSI. In the minimum, the received signal power and signal quality associated with a statistical reliability parameter would more clearly specify the extent of coverage being provided. Such a definition would also allow for:</p> <ul style="list-style-type: none"> • consistently and objectively comparing tender responses with service quality standards • completing acceptance testing • ensuring the ongoing performance of the services provided is maintained. <p>Additionally ‘service availability’, defined as the time in which services provided to the coverage area delivered by a base station site are available for use, is proposed as an appropriate indicator that would ensure that the mobile network design maintains desired standards.</p>
<p>Delivery option 2 – Order of merit from base stations proposed by multiple MNOs</p>	<p>The order of merit approach (that is a tower by tower, or base station by base station funding decision) may create competitive tension during the tendering process but risks administrative complexity, loss of economies of scale in network development and a disjointed outcome potentially creating MNO islands without contiguous coverage. This approach does not ensure provision of maximum effective coverage.</p> <p>While it is feasible that carriers may express an interest in common sites, the Victorian Government considers this option has the potential to create exceedingly complex commercial and administrative arrangements that will not be cost effective or timely.</p> <p>In our view, retaining NBN Co as the Commonwealth’s reserve position is more likely to create competitive tension during the tender (refer response to Question 19).</p>

	<p>A requirement for roaming is important for delivery of option 2 given the likelihood of coverage being provided for by more than one MNO and the potential lack of contiguous coverage.</p>
<p>3. Does delivery option 2 for the \$80 million Mobile Network Expansion component raise any additional issues that need to be considered?</p>	<p>Co-contributions based on a base station by base station approach raises complexities and creates inflated bidding and administrative (contractual and compliance) costs. The Victorian Government is wary of any approach that involves base station by base station agreements and subsequent protracted commercial negotiations.</p>
<p>Delivery option 3 – Network infrastructure provider to co-ordinate implementation</p>	<p>This option is preferred as it has the potential to deliver good coverage and competition outcomes, and would be administratively efficient.</p> <p>However it faces practical difficulties given that it is dependent on infrastructure players making investments in areas with low traffic volumes and the development of an immature mobile wholesale market. The infrastructure operator will also require access to spectrum in locations which are dispersed and fragmented.</p> <p>NBN Co could assist by actively providing wholesale mobile services (subject to review and amendment of current legislation) and at a minimum through access to its infrastructure and backhaul transmission</p> <p>Commonwealth Government subsidised NBN infrastructure should be made available at low cost recognising the level of Government subsidy provided. The involvement of NBN Co presupposes a level of commitment by NBN Co and ability to plan for implementation of shared access. The Victorian Government's views on this matter are provided in more detail in responses to questions 18 to 22. And a more holistic/integrated NBN/MCP solution is likely to be more efficient and effective in meeting regional communications needs – refer response to question 19.</p> <p>Network infrastructure providers should also be requested to provide a right of use provision to ensure that the site infrastructure can be leveraged by government and emergency services radio systems. This provision would allow an agreed list of Government agencies and non-Government nominated agencies to:</p> <ul style="list-style-type: none"> • Install equipment and utilise a portion of the infrastructure at no ongoing costs for a period of between 10 and 15 years;

	<ul style="list-style-type: none"> • Site design to allocate <ul style="list-style-type: none"> ○ a reserved space with a suitable headframe not more than 5 metres from the top of tower; ○ sufficient space for equipment shelters for government radio equipment; ○ sufficient transmission capacity for government related services; ○ sufficient AC power and switchboard facilities for government related services; <p>Where co location is required as part of MCP funding these requirements ought to be provided for at low cost.</p>
<p>4. Could options 3(a) or 3(b) for the \$80 million Mobile Network Expansion Project be delivered in conjunction with options 1 or 2 to enable network infrastructure providers to compete with MNOs?</p>	<p>Yes, but it is considered unlikely that the \$80 million project provides enough room for multiple delivery models.</p> <p>The Victorian Government suggests that conditions implicit in option 3 (b) should be applied to options 1 and 2.</p> <p>The multiple tendering processes are likely to increase the cost to bidders, discouraging or weakening the competitiveness responses.</p>
<p>5. Should bidders be able to propose to incorporate the use of base stations owned by NBN Co as part of their bid?</p>	<p>Yes. As noted above the Commonwealth's investment in NBN infrastructure should be proactively leveraged for improved MCP outcomes.</p>
<p>6. Should a joint bid (between a specialist network infrastructure provider and a MNO) be permitted? Should it be encouraged?</p>	<p>Notwithstanding the Victorian Government's preference for a roaming solution, joint MNO and infrastructure provider bids should be encouraged to increase competitive tension in the MCP tender process and as a pro-competitive outcome likely to have broader market benefits.</p>
<p>7. Is it realistic to expect specialist network infrastructure providers to provide backhaul (recognising that they would presumably need to contract with a third party to</p>	<p>The MCP should encourage this outcome as it would have broader market benefits.</p> <p>Whether the outcome is realistic is subject to the Commonwealth Government regulation and subsidy of regional backhaul. It will not be a natural outcome of a \$100 million subsidy for mobile</p>

provide this)?	communications.
8. Is option 3(b) suitable for Australia's regional mobile market?	This option has the potential to improve effective coverage but the Victorian Government also recognises it faces a number of practical difficulties as noted earlier.
Open access and co-location provisions	The Victorian Government supports open access and co-location provisions but notes this is a 'second best solution' and unlikely to drive competition in these locations. See paragraphs 24 to 29.
9. What are the appropriate specifications for a base station to be able to accommodate at least two other MNOs?	<p>Base station specifications to meet the requirements of three carriers include:</p> <ul style="list-style-type: none"> • additional tower capacity (height and strength) • larger and divisible communications hut space • ability to access permanent power, and • adequate and upgradeable backhaul capacity <p>The costs to meet these specifications would be substantial, and on this basis this approach is inefficient compared to roaming (see discussion at paragraphs 21-27).</p> <p>The Victorian Government notes that it is likely that State Governments may seek to develop the mobile voice and data communications capabilities for their emergency services in the future. Failure to make adequate capacity on MCP subsidised infrastructure will reduce options for future competitive procurement. Where co-location capacity is funded under the MCP it should include consideration of emergency services requirements as this will provide the most efficient use of taxpayer funding and public safety benefits in the long term. Refer to question 3 response.</p> <p>The Commonwealth should also consider is whether mobile telephony facilities in fire prone areas should be built to specifications that enable them to better withstand fire conditions. This could include power options as well as structural integrity.</p>

<p>10. Will the proposed open access provisions be sufficient to encourage other MNOs to use the base stations to provide mobile services?</p>	<p>Australian experience suggests that open access provisions alone will not be sufficient and should not be relied upon to meet the competition objective.</p>
<p>11. Should MNOs be required to pre-commit to/co-invest in the base stations for which they wish to share infrastructure?</p>	<p>A pre-commitment to invest is unlikely in regional markets with low revenues.</p>
<p>12. What is the estimated additional cost of requiring all new base stations to meet the open access requirements?</p>	<p>The provision of open access arrangements to allow three MNO's (as a means to provide effective coverage) to operate at a site compared to just a single MNO can take different approaches. The Victorian Government has received advice regarding the additional estimated cost of some approaches and led to the view that the MCP should strongly pursue roaming and/or shared backhaul transmission as the most efficient means to provide effective coverage.</p> <ol style="list-style-type: none"> 1. Effective coverage provided through three MNO's - the additional costs to deploy and collocate three MNO's at an open access infrastructure site is significantly more than implementing a site that is intended to deploy only one MNO: <ul style="list-style-type: none"> • between \$100,000 to \$150,000 per site for additional site infrastructure, including shelters, power, and tower structure • no material additional costs if shared backhaul is assumed • between \$100,000 and \$250,000 per site for Radio Access equipment installed by the MNO's depending on the radio access configuration (2G, 3G and 4G) supported by the MNO's at the site. 2. Effective coverage through roaming - establishment of a national roaming agreement (both technical and commercial aspects) between two of the existing Australian based operators would cost no more than a CAPEX of \$1 million and an OPEX of \$100,000 for roaming across 2G and 3G networks. This cost would be spread across MCP areas/sites. It is noted that some MNOs already

	<p>have roaming agreements and that marginal costs would be lower in those cases.</p> <p>The costs associated with deploying one MNO with a roaming agreement is therefore significantly less than the additional costs of installing the equipment of three MNOs at a site with open access infrastructure arrangements.</p> <p>The additional cost to provide separate microwave backhaul transmission for each MNO at a site as compared to sharing a common microwave backhaul link, could amount to between \$200,000 and \$300,000 per site.</p>
<p>13. Should the proposed open access provisions be applicable to base stations funded under the \$20 million component, or should there be scope to exclude some base stations from these requirements?</p>	<p>Noting previous comments in regard to the efficiency of roaming, a second best solution is that open access should be provided in all cases where the public has subsidised infrastructure development.</p>
<p>14. What are the most appropriate models/benchmarks for establishing access and backhaul pricing, and for reflecting in that pricing the value of the public funding received by the owner of the facilities (such that access seekers receive an appropriate discount from the market price for access to the facility)?</p>	<p>Pricing of access to facilities and backhaul should be transparent and reflect the level of government subsidy provided in recognition of the Governments coverage and competition objectives (including the Commonwealth Government's investment in NBN Co's infrastructure already deployed).</p> <p>In principle infrastructure access including backhaul should be calculated on a marginal cost basis allowing for the Commonwealth's contribution to:</p> <ul style="list-style-type: none"> a) the capital cost of increased tower and facilities capacity (such as a higher and more robust tower, larger and divisible communications hut space, ability to access power; adequate and upgradeable backhaul capacity b) shared and attributable operations and maintenance costs <p>It is not appropriate that access seekers pay a full commercial return on services delivered over highly subsidised assets.</p> <p>It is not clear how the MCP establishes principles to govern backhaul pricing and backhaul pricing will</p>

	<p>be a challenge for the MCP. A clear risk is that backhaul access and pricing is gamed by the winning MCP bidder to hinder the development of competition in regional markets.</p> <p>Regional backhaul markets are not competitively priced and create a significant barrier to investment in regional access networks. The Commonwealth Government could adopt remedial regulatory action such as making available NBN Co transit backhaul at low regulated prices; and submit to the current ACCC investigation of transmission declaration that attention to regional backhaul prices is a key mobile competition issue.</p> <p>The Victorian Government notes that the Commonwealth has recent experience in intervening in the regional backhaul market through the Regional Backbone Blackspots Program (RBBP). It is noted that in Victoria the deployment of the RBBP has not been leveraged by the Commonwealth Government to facilitate a more rapid/lower cost NBN, or other public safety benefits.</p> <p>The Victorian Government urges the Commonwealth to request backhaul pricing on a site by site cost basis for evaluation as part of bids to the MCP.</p>
<p>Proposed Assessment Criteria</p>	<p>Effective coverage of people in terms of population, premises and traffic volumes on transport routes should receive a high weighting. Equally effective coverage should be defined to include coverage by all MNOs. In other words a coverage area proposed by a single MNO should be valued in line with its market share (eg. a single carrier with 49% market share counts for 49% effective coverage while two carriers with market share of 51% provides effective coverage of 51%).</p> <p>Roaming should be an assessment criterion and strongly encouraged.</p> <p>Open access arrangement should be made a mandatory condition and requirement of bids that exclude roaming.</p>
<p>15. Do the proposed assessment criteria achieve the right balance to deliver the best value for money outcomes?</p>	<ul style="list-style-type: none"> • Roaming should be valued highly and included as assessment criteria. • Access arrangements should be mandated. • Coverage benefit is not well defined and ought to reference:

	<ul style="list-style-type: none">- % of mobile subscribers that get coverage (to measure <i>effective mobile coverage</i>)- square kilometres of coverage metrics be weighted for population/premises (with a weighting to include transient/seasonal peak populations) and traffic/commuter population that gets coverage- a weighting be applied to businesses and key organisations premises- transient and commuter populations need to be factored in• as currently stated the co-contributions assessment criteria does not does not specifically reference in-kind contributions.• areas prone to natural disaster requires tighter definition and qualification through evidence and risk evaluation.• as currently stated the value for money assessment criteria does not include reference to effective coverage• assessment criteria should include the likelihood of competing MNO entry
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<p>16. Should the proposed assessment criteria be weighted, and if so, how?</p>	<p>Yes – as outlined below.</p> <table border="1" data-bbox="808 328 2056 1058"> <thead> <tr> <th data-bbox="808 328 1301 432">Proposed assessment criteria</th> <th data-bbox="1301 328 1509 432">Suggested weighting (5 highest)</th> <th data-bbox="1509 328 2056 432">Comments</th> </tr> </thead> <tbody> <tr> <td data-bbox="808 432 1301 568">1. Match with priority programme locations</td> <td data-bbox="1301 432 1509 568">*</td> <td data-bbox="1509 432 2056 568">Not clear this is required if bids are made against the Commonwealth's list that is developed in consultation with MNOs, states and communities.</td> </tr> <tr> <td data-bbox="808 568 1301 639">2. New coverage</td> <td data-bbox="1301 568 1509 639">3</td> <td data-bbox="1509 568 2056 639">An assessment criterion 3 is preferable – see below.</td> </tr> <tr> <td data-bbox="808 639 1301 711">3. Extent of coverage benefit</td> <td data-bbox="1301 639 1509 711">5</td> <td data-bbox="1509 639 2056 711">Geographic coverage weighted according to effective coverage</td> </tr> <tr> <td data-bbox="808 711 1301 847">4. Co-contributions</td> <td data-bbox="1301 711 1509 847">5</td> <td data-bbox="1509 711 2056 847"> <ul style="list-style-type: none"> • Must include value of in-kind State contributions • Cash should be valued more highly than in-kind </td> </tr> <tr> <td data-bbox="808 847 1301 919">5. Value for money to the Commonwealth</td> <td data-bbox="1301 847 1509 919">5</td> <td data-bbox="1509 847 2056 919">Cost against assessment criteria 3 in preference to assessment criteria 2</td> </tr> <tr> <td data-bbox="808 919 1301 959">6. Open access</td> <td data-bbox="1301 919 1509 959">*</td> <td data-bbox="1509 919 2056 959">Be a mandatory requirement not optional</td> </tr> <tr> <td data-bbox="808 959 1301 1031">7. Commitment from more than one MNO</td> <td data-bbox="1301 959 1509 1031">5</td> <td data-bbox="1509 959 2056 1031"></td> </tr> <tr> <td data-bbox="808 1031 1301 1058">8. Roaming</td> <td data-bbox="1301 1031 1509 1058">5</td> <td data-bbox="1509 1031 2056 1058">Proposed new assessment criterion</td> </tr> </tbody> </table>	Proposed assessment criteria	Suggested weighting (5 highest)	Comments	1. Match with priority programme locations	*	Not clear this is required if bids are made against the Commonwealth's list that is developed in consultation with MNOs, states and communities.	2. New coverage	3	An assessment criterion 3 is preferable – see below.	3. Extent of coverage benefit	5	Geographic coverage weighted according to effective coverage	4. Co-contributions	5	<ul style="list-style-type: none"> • Must include value of in-kind State contributions • Cash should be valued more highly than in-kind 	5. Value for money to the Commonwealth	5	Cost against assessment criteria 3 in preference to assessment criteria 2	6. Open access	*	Be a mandatory requirement not optional	7. Commitment from more than one MNO	5		8. Roaming	5	Proposed new assessment criterion
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<p>17. Is there a more effective means of assessing seasonal demand than proposed in criterion 3(c)?</p>	<p>Better estimates of transient and travelling population are required. Transient populations along the Victorian coastline have been analysed by the Department of Transport, Planning and Local Infrastructure and categorised as including: weekend populations, holidaymakers, day-trippers, festival attendees, seasonal workers, working populations, mobile skilled workers and construction crews (refer Population and Settlement along the Victorian Coast - http://www.vcc.vic.gov.au/assets/media/files/Final_report_population_and_settlements_Aug_2013.pdf). The methodology developed to calculate peak population estimates takes into account potential</p>																											

	population should unoccupied dwellings and tourist accommodation is fully utilised.
Using the NBN Fixed wireless network	Integration and coordination with the NBN will provide for the most cost efficient and comprehensive solution for regional communications. Areas for integration should not be limited to NBN Co's fixed wireless network but also its backhaul/transit fibre, and network extensions program (particularly where MCP funding might be leveraged to support upgraded NBN satellite in communities that have demand for better infrastructure and services).
18. To what extent would the use of the NBN fixed wireless network result in improved mobile coverage outcomes in regional Australia?	<p>The known NBN Co fixed wireless footprint has a significant overlap with mobile black spots in Victoria. Desk based research suggests up to 30% of Victoria's high fire risk mobile blackspots have NBN Co fixed wireless infrastructure planned.</p> <p>It is also noted that the NBN Co rules for network extensions are currently being re-examined (refer question 19 response).</p> <p>Previous rules enabled communities to upgrade their NBN satellite services to fixed wireless at full incremental costs. There are numerous Victorian remote communities with satellite services in mobile blackspot areas that would benefit from upgraded infrastructure and where the MCP might be leveraged for this outcome.</p>
19. How best can a greater role for NBN Co improve competition and choice for consumers in regional Australia?	<p>There are numerous options for NBN Co to improve competition and choice, such as:</p> <ul style="list-style-type: none"> • Commonwealth policy to enable MNOs eligible to tender for NBN fixed wireless service areas • legislative changes to enable NBN Co to provide a wholesale mobile service as per option 3(b) and provide a reserve position to the procurement • infrastructure design and deployment to enable sharing • infrastructure access on favourable terms to encourage access (refer to question 14 response) • planning information to ensure appropriate facilities are developed • proactively look to upgrade satellite towns to fixed wireless leveraging MCP

	<ul style="list-style-type: none"> • consideration of providing a substitute or complimentary mobile broadband NBN solution, through contracting out the provision of open access to an MNO (subject to contractual constraints with fixed wireless provider who may well be willing to switch to wireless provision as required – possibly using much of the same telecoms equipment). • focus on Commonwealth regional communications policy integration (refer paragraphs 10-14). <p>These options ought to be considered as part of the Commonwealth review of the NBN. However it is difficult to see how the timing of the MCP can be made to fit without change to both processes.</p>
<p>20. In addition to base station location, design and backhaul access, what other considerations would NBN Co need to take into account if it were to also support mobile coverage and competition benefits as part of its mandate?</p>	<p>Refer Question 19 response.</p>
<p>21. How can early engagement between NBN Co and MNOs be facilitated in the design of each base station? Is there a role here for the Australian Mobile Telecommunications Association (AMTA)?</p>	<p>This should be included in the NBN Co Statement of Expectations.</p>
<p>22. How can the Mobile Coverage Programme best complement any role that the NBN fixed wireless service plays in improving mobile coverage and competition?</p>	<p>Refer Question 18 and 19 responses.</p>